
Curriculum Vitae for

Ranjan Ganguly, PhD



Professor

Power Engineering Department, Jadavpur University

LB 8, Sector III, Salt Lake

Kolkata, India 700106

Phone: +91-33-25424902; Fax: +91-33-23357254;

E-Mail: ranjan.ganguly@jadavpuruniversity.in; rgangu2@yahoo.com

Mobile: +91 9830371618

Contents

Details 3

 Education 3

 Professional Experience..... 3

 Awards/ Fellowships..... 4

 Honors..... 5

 Membership..... 6

Research Experience 6

 Sponsored Research, Education, and Institutional Projects 6

 Research Experience: 7

Patents, Patent Applications and Invention Disclosures 9

Publications..... 10

 Refereed Archival Articles 10

 Book Chapters and Edited volumes 21

 National Journal 22

 Proceedings Publication/ Conference Presentation 22

Sessions Chaired 33

Invited Talks 34

Research Supervised 34

Teaching Experience..... 37

Industrial Consultancy..... 38

Invited Industrial/ Academic Talks/ Seminars Delivered 38

Representative Institutional Assignments..... 39

Other Academic Outreach Assignments 40

Reviewer for the Journals: 40

Reviewer of proposals for funding agencies: 41

Personal..... 42

References 42

DETAILS

Designations

Professor, Power Engineering Department, Jadavpur University

Also: Adjunct Associate Professor (2015-2017), and Adjunct Professor (2017-Present)

Mechanical and Industrial Engineering Department, University of Illinois at Chicago

Work (Contact) Address

Jadavpur University

Power Engineering Department

LB-8, Sector III, Salt Lake, Kolkata 700106, INDIA

Phone: +91-23355813 ext-167, Fax: +91-33-23357254

E-Mail: ranjan.ganguly@jadavpuruniversity.in, rgangu2@yahoo.com

Web: <http://ranjanjupe.wixsite.com/ranjanganguly>

Residence

Dr. Kedareswar Banerjee Sarani, Noapara, Barasat, Kolkata 700125, India

Phone: +91-33-25424902, +91-9830371618 (M)

Education

Ph. D. 2005, Mechanical Engineering, [University of Illinois at Chicago](#). Thesis Advisor: Professor Ishwar K. Puri. (CGPA 4.0/4.0).

M. E. 2000, Heat Power, [Jadavpur University](#), Kolkata, India. (88.0% marks)

B. E. 1995, Power Plant Engineering, [Jadavpur University](#), Kolkata, India. (88.7% marks).

Professional Experience

[Jadavpur University, Kolkata, India](#)

June 30, 2010 – Present [Professor](#), Power Engineering Department

Jan 1, 2006–June 29, 2010 [Associate Professor](#), Power Engineering Department

Aug 22, 2002–Dec 31, 2005 [Reader](#), Power Engineering Department

May 23, 1997–Aug 22, 2002 [Lecturer](#), Power Engineering Department

[Leibniz Universität Hannover, Germany](#)

2008–09 AvH Postdoctoral Fellow, Institute for Nano- and Micro process Technology

University of Illinois at Chicago, USA

2013–2014 Visiting Researcher, Micro/Nanoscale Fluid Transport Laboratory, Department of Mechanical and Industrial Engineering

2002–2004 Graduate Research Assistant, Reacting Flow Laboratory, Department of Mechanical and Industrial Engineering.

2001–2002 Teaching Assistant, Department of Mechanical and Industrial Engineering.

Virginia Tech, USA

2004–05 Research Associate, Engineering Science and Mechanics Department

2006 Research Associate, Engineering Science and Mechanics Department

Larsen and Toubro Limited, India

1995–97 Graduate Engineer, Power Project Development Department, New Delhi.

Awards/ Fellowships

1. *Fellow, Indian National Academy of Engineering* (2022).
2. *Alexander von Humboldt Fellowship* for Postdoctoral Research in Germany (2008).
3. *Indian National Academy of Engineering (INAE) Young Engineer Award* (2008).
4. *Fellow, West Bengal Academy of Science and Technology* (2019)
5. *Dean's Scholar Award* (Fellowship), University of Illinois at Chicago (2004-05).
6. *Provost's Award for Graduate Research*, University of Illinois at Chicago (2004).
7. *Sarojini Radhakanta Majumdar Memorial Gold Centered Silver Medal* for securing the highest percentage of marks among all the courses of Master of Engineering and Technology, Jadavpur University (2000).
8. *University Medal* for standing first in the Masters of Engineering examination, Jadavpur University (2000).
9. *University Medal* for standing first in the Bachelor of Power Plant Engineering examination, Jadavpur University (1995).

10. Department of Atomic Energy *Young Scientist Research Award* (2006).
11. *Prof. BVSSS Prasad Memorial Best Paper Award* at the 48th National Conference on Fluid Mechanics and Fluid Power, Dec 27-29, 2021, BITS Pillani, Rajasthan.
12. *Dr. M.G. Deshpande Memorial Award* for the best paper from Academia at the 8th International and 47th National Conference on Fluid Mechanics and Fluid Power, Dec. 9—11, 2020, IIT Guwahati, India.
13. *Best Paper Award* at the International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES – 2020], February 10-12 2020, NIT Rourkela, India.
14. *Best Paper Award* at the 1st International Conference on Electronics Devices and Computational Techniques (IEEE). March 8–9, 2018. GNIT, Kolkata, India.
15. *PK Sarma Best Paper Award* in the 24^h National & 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2017), December 27-30, 2017, BITS Pilani, Hyderabad, India.
16. *PK Sarma Best Paper Award* in the 20th National & 9th ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, NPCIL, Mumbai, India.
17. *VMK Sastry Best Poster Award* in the 19th National & 8th ISHMT-ASME Heat and Mass Transfer Conference, January 3-5, 2008, JNTU, Hyderabad, India.
18. *Dr. M.G. Deshpande Memorial Award* for the best paper from Academic and Research organizations at the 34th National Conference on Fluid Mechanics and Fluid Power, Dec. 10-12, 2007, BIT Mesra, India.

Honors

1. *Adjunct Associate Professor, and Adjunct Professor Position*, Department of Mechanical and Industrial Engineering, University of Illinois at Chicago, 2015 – Present.
2. *Distinguished Alumni recognition*, Jadavpur University, 2017.
3. *INAE Young Associate*, 2012 – 2019.
4. *Certificate of Outstanding Reviewer*, by Journal of Magnetism and Magnetic Materials, Elsevier, November, 2015.
5. Citation in *Marquis Who's Who* 2009 Edition.
6. *2003-04 Who's Who Among Students in American Universities and Colleges*, Nominated from University of Illinois at Chicago.

7. Finalist at 3rd. Science and Engineering Visualization Challenge, international visualization competition by American Association for the Advancement of Science (AAAS) and National Science Foundation (NSF), for an entry titled “El Collar del Hierro: The Ferro-Necklace”. (http://www.nsf.gov/news/mmg/mmg_disp.jsp?med_id=59616)

Membership

1. Life Member, Indian Society for Magnetic Fluids Research.
2. Life Member, Indian Society for Heat and Mass Transfer.
3. Life Member, Combustion Institute (Indian Section).
4. Member, The Institute of Engineering and Technology, UK.

RESEARCH EXPERIENCE

Sponsored Research, Education, and Institutional Projects

1. Optimizing wettability-engineered metal mesh for cooling tower fog harvesting, DST-SERB Core Research Grant (Grant Number SERB/F/10326/2019-2020), INR. 4.6023 million, 2020 – 2023, Principal Investigator.
2. Study of condensation in presence of non-condensable gases: effects of surface wettability and flow parameters, BRNS-Department of Atomic Energy, Govt. of India (Grant number 36(1)/14/24/2016-BRNS), INR. 4.092 million, 2016 – 2020, Principal Investigator.
3. Design and characterization of thermomagnetic pump for microfluidic applications, BRNS-Department of Atomic Energy, Govt. of India (Grant number 2008/36/07-BRNS), INR 0.89 million, 2008 – 2011, Principal Investigator.
4. Numerical and experimental investigation of field-induced aggregation of magnetic microspheres for MEMS applications, Department of Atomic Energy-Young Scientist Research Award (Grant number 2005/20136/7-BRNS), INR 0.7903 million, 2006 –2009, Principal Investigator.
5. Lab-in-a-droplet using magnetic microspheres, Department of Science and Technology (Govt. of India) funded SERC Fast Track Proposal for Young Scientists (Grant number SR/FTP/ETA-07/06), INR 0.504 million, 2006 – 2008, Principal Investigator.

6. Distributed Generation, UGC (SAP) - DRS Scheme (Grant number F.3-31/2012(SAP-II)), INR 7.5 million, 2012 – 2017, Project Coordinator.
7. Development of a high-efficiency domestic LPG stove through numerical simulation, LPG Equipment Research Centre, Govt. of India (Grant number LERC/638/17-18/01), INR 0.4254 million, 2017 – 2020, Co-investigator.
8. Modeling of Spray Combustion in Gas Turbine Combustor considering Thermal Radiation and Soot Formation with Experimental Validation at different Spray Condition and Air Flow Distribution, GTRE-GATET, Govt. of India, INR 2.167 million, 2012 – 2016, Co-Investigator.
9. Experimental investigation of partially premixed flames, Defense Research Development Organization, Govt. of India, ERIPR, INR 0.4254 Million, 2006 – 2007, Co-investigator.
10. Distributed Generation, UGC Departmental Research Scheme (DRS) under Special Assistance Program (SAP), Govt. of India, INR 7.5 Million, Coordinator.

Research Experience:

1. **Wettability engineering for heat and mass transfer applications:** This is a current research area in collaboration with Prof. C.M. Megaridis of University of Illinois at Chicago. The work involves tuning surface wettability for controlling fluid transport for open microfluidic platforms and for condensing surfaces. The research focuses on developing substrate-independent facile technology for implementing patterned wettability. Liquids on such wettability-patterned surfaces exhibit capillary pressure-driven transport without any external energy input. Such transport can be effectively used in removing condensate droplets from a condensing surface, thus promoting dropwise condensation heat transfer. Also, the pump-less transport, including metering, merging and splitting, of liquid droplets on such wettability-patterned surface can be leveraged to develop paper-based microfluidic devices. A separate work on developing self-cleaning surface for solar photovoltaic cells is also being undertaken.
2. **Fog harvesting using wettability-engineered meshes:** This research focuses on developing wettability-engineered metal meshes for harvesting water from the fog-plumes in cooling tower of power plants. The idea is to design, in the first place, the mesh weaving such that the maximum number of oncoming fog droplets are deposited on the mesh. At the next level, the mesh wettability is modified such that the deposited

droplets easily roll down to the collector, and the losses due to liquid carry-over, gravity-induced dripping and mesh-clogging are minimized. An extension of the work has also demonstrated ability of photocatalytically functionalized meshes to degrade fog-borne volatile organic compounds, thus showing promise to decontaminate industrial fog.

3. **Magnetic microspheres for microfluidic biosensor applications:** This research investigates field-induced transport of magnetic microspheres in microfluidic environment to achieve specific bioanalytical tasks for lab-on-chip applications. These include attaining *in-situ* bio-functionalization on magnetic particles, mixing of analytes, and selective immunomagnetic separation of target analytes from samples. The research also aims at developing innovative microfluidic designs that combine a micromixer and particle separator for rapid yet accurate bio-sensing. This field of research has attracted international collaborations with Prof. Ishwar K. Puri (McMaster University) and Prof. Steffen Hardt (T.U. Darmstadt).
4. **Ferrofluid transport analyses for thermal and biomedical applications:** Numerical and experimental investigations involving transport of ferrofluids for thermal applications are carried as part of this research investigation. Thermomagnetic transport relies on the temperature dependence of ferrofluid magnetic susceptibility. Under superposed temperature magnetic field gradients, Kelvin body force is established in the magnetic fluid, creating thermomagnetic convection. Such flow can be used for electronics cooling applications. A thermomagnetic convection-based pump that is capable of transporting fluid in a hermetically sealed environment without any moving components has also been developed. Biomedical application of ferrofluid involves ferrofluid transport analysis for Magnetic Drug Targeting (MDT) and magnetic fluid hyperthermia (MFH). The analyses provide the basis for selecting MDT and MFH treatment parameters (e.g., particle loading, blood flow, magnetic field strength, tissue properties, etc.) for maximum efficacy. The work also involved collaboration with Prof. Ishwar K. Puri at Virginia Tech (presently at McMaster University).
5. **Energy and exergy analysis of power plant systems:** Thermodynamic analyses of power plant systems are performed to identify the major loss components in an operating power plant. Also, O&M strategies have been formulated based on a novel exergy-based approach, which offer better predictive maintenance than first-law based approaches. One outgrowth of this research also involved tuning of power plant controllers (e.g., superheater attemperators) based on exergy analysis.

6. **Combustion applications:** Numerical and experimental investigations of nonpremixed and partially premixed flames were performed to understand the effects of inertia and gravity forces on flame structure. Microgravity experiments at the 2.2 s drop tower facility of NASA Glenn Research Center were carried out, which shed light on the coupled role of gravity and radiative heat transfer on the flames and fire dynamics under reduced gravity and is important for fire safety analysis for space shuttles.

PATENTS, PATENT APPLICATIONS AND INVENTION DISCLOSURES

1. Megaridis, C. M., Ganguly, R., Ghosh, A. and Schutzius, T. M., “Wettability patterned substrates for pumpless liquid transport and drainage,” **US Patent No. 10,421,072 B2 dated Sep. 24, 2019**. International Patent Classification: B05C 5/00 (2006.01); B32B 27/30 (2006.01); G01N 15/10 (2006.01); G01N 21/75 (2006.01), International Application No: PCT/US2015/012302, Filed on: 21.01.2015, Pub. No: WO/2015/112635; Publication Date: 30.07.2015, US Patent Application No US 2016/0339424 A1, Published on November 24, 2016.
2. Bera, A.K., Verma, M., Das, M., Datta, A., Ganguly, R., Spill-tray and pan support for thermal efficiency enhancement of a domestic LPG stove. **Indian Patent Number 327999**. Indian Patent Application No. 201841049368, Filed on December 27, 2018.
3. Datta, A., Mukhopadhyay, A., Datta, A., Ganguly, R., “‘Never-clog’ mesh designs for capture and separation of a dispersed phase from a flowing fluid stream and systems thereof,” Indian Patent filed, Application Number 202231045629, Date of Filing: 10th August, 2022.
4. Mukhopadhyay, A., Datta, A., Datta, A., Ganguly, R., “An IoT-based Portable, Integrated, Remotely Operable Environmental Chamber with real-time location tracking for multimodal, multi-system applications,” Indian Patent filed, Application Number 202231030204, Date of Filing: 26th May, 2022; Publication Date (U/S 11A): 24th June, 2022.
5. Bhattacharya, S., Ganguly, R., Chakraborty, S., “A lab-on-a-chip based system to evaluate efficacy of magnetic fluid hyperthermia,” Indian Patent filed, Application Number 201931019943, Date of Filing: 20th May, 2019; Publication Date (U/S 11A): 27th November, 2020.

6. Megaridis, C.M., Chatterjee, S., Mahapatra, P.S., Sen, U., Ganguly, R., Yu, L., Dodge, R. N., "A method and device for moving and distributing aqueous liquids at high rates on porous, nonwoven substrates," Tech ID: 65/013,631, Disclosure filed at OTM of UIC on 18.11.2016, PCT filed on 24/05/2018, PCT/US2017/061914, US Patent Application Publication No. US 2019/0344266 A1, Published on Nov. 14, 2019.
7. Ghosh, R., Sahu, R. P., Ganguly, R., Zhitomirsky, I., and Puri, I. K., Photocatalytic Activity of Electrophoretically Deposited TiO₂ and ZnO Nanoparticles on Fog Harvesting Meshes, McMaster University Invention Disclosure, 19-085, submitted (April 25, 2019).
8. Koukoravas, T.P., Ghosh, A., Mahapatra, P.S., Ganguly, R., and Megaridis, C.M., "Spatially-selective cooling with wettability-engineered surfaces." Tech ID: 2015 - 145, Disclosure filed at OTM of UIC on 14.05.2015.
9. Morrisette, J., Mahapatra, P.S., Ghosh, A., Ganguly, R., and Megaridis, C.M., "Open Surface Micromixers," Tech ID: 2016-029, Disclosure filed at OTM of UIC on Sept 3, 2015.
10. Chatterjee, S., Mahapatra, P.S., Ibrahim, A., Megaridis, C.M., Ganguly, R., Wettability-patterning method and designs to pumplessly and precisely manipulate liquid volumes in porous materials, Kimberly Clark invention disclosure ID 65020149 (filed in November 11, 2016).

PUBLICATIONS

Journal Citation Index (as on January 2023): 34 in Google Scholar

Refereed Archival Articles (Impact Factor corresponds to that in the publication year)

1. Sarkar, S., Gupta, R., Roy, T., Ganguly, R., Megaridis, C.M., "Review of jet impingement cooling of electronic devices: Emerging role of surface engineering," International Journal of Heat and Mass Transfer, Article in Press, 2023. **(IF = 61.54)** <https://doi.org/10.1016/j.ijheatmasstransfer.2023.123888>
2. Mahapatra, P.S., Ganguly, R., Ghosh, A., Chatterjee, S., Lowrey, S., Sommers, A.D., Megaridis, C.M., "Patterning wettability for open-surface fluidic manipulation: Fundamentals and applications." Chemical Reviews, 122(22), pp. 16752 – 16801, 2022. **(IF = 61.54)** <https://doi.org/10.1021/acs.chemrev.2c00045>.

3. Banik, S., Mirja, A.S., Biswas, N., Ganguly, R., “Entropy analysis during heat dissipation via thermomagnetic convection in a ferrofluid-filled enclosure,” *International Communications in Heat and Mass Transfer*, 138, pp. 106323 (1–16), 2022, **(IF= 5.683)** <https://doi.org/10.1016/j.icheatmasstransfer.2022.106323>.
4. Bhattacharya, S., M, Kiran Raj, Priyadarshani, J., Ganguly, R., Chakraborty, S., “Targeting Magnetic Nanoparticles in Physiologically Mimicking Tissue Micro-environment,” *ACS Applied Materials & Interfaces*, 14 (28), pp. 31689–31701, 2022, **(IF= 10.38)** <https://doi.org/10.1021/acsami.2c07246>.
5. Das, P.K., **Dash**, S.K., Ganguly, R., Santra, A. K., Venkatesan, E.P., Rajhi, A.A., Afzal, A., “Effect of particle loading and temperature on the rheological behavior of Al₂O₃ and TiO₂ nanofluids,” *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 44(3), 7062-7079, 2022, **(IF= 2.49)**, <https://doi.org/10.1080/15567036.2022.2103214>.
6. Dutta, A., Santa, A.K., Ganguly, R., “Nonlinear temperature gradient focusing of deoxyribose nucleic acid in a microfluidic channel with patterned surface charges: A numerical study” *Journal of Thermal Science and Engineering Applications*, 14(11): pp. 114501 (1–6), 2022, **(IF= 1.47)** <https://doi.org/10.1115/1.4054911>.
7. Das, C., Halder, S, Datta, A., Ganguly, R., “Influence of surface wettability on the transient characteristics of vapor condensation from humid air,” *Experimental Heat Transfer*. pp. 1–26, 2022. <https://doi.org/10.1080/08916152.2022.2086945>, **(IF= 4.058)**.
8. Das, P.K., Mallik, A.K., Hossain, A., Santra, A.K., Ganguly, R., Saha, A., Kumar, S., Aswal, V.K., “Experimental investigation for stability and surface properties of TiO₂ and Al₂O₃ water based nanofluids,” *Journal of Thermal Analysis and Calorimetry*. 147, pp. 5617–5635, 2022, **(IF= 4.626)** <https://doi.org/10.1007/s10973-021-10894-0>.
9. Moitra, S., Roy, T., Ganguly, R., Megaridis, C.M., “Jet impact on superhydrophobic metal mesh,” *Langmuir*, 37(9), pp. 2891-2899, 2021, **(IF= 4.331)** <https://doi.org/10.1021/acs.langmuir.0c03301>.
10. Das, C., Gupta, R., Halder, S, Datta, A., Ganguly, R., “Filmwise condensation from humid air on a vertical superhydrophilic surface: explicit roles of the humidity ratio difference and the degree of subcooling,” *Journal of Heat Transfer, Transactions of ASME*, 143(6): 061601 (1–9), 2021. <https://doi.org/10.1115/1.4050412>, **(IF= 1.73)**.

11. Dutta, A., Santra, A.K., Ganguly, R., “Microfluidic concentration enhancement of bio-analyte by temperature gradient focusing via Joule heating by DC plus AC field: A numerical approach,” *Journal of Thermal Science and Engineering Applications*, 13 (6), 061002, 2021, <https://doi.org/10.1115/1.4050415>, (IF= 1.47).
12. Sarkar, S., Roy, T., Roy, A., Moitra, S., Ganguly, R., Megaridis, C.M., “Revisiting the Supplementary Relationship of Dynamic Contact Angles Measured by Sessile-Droplet and Captive-Bubble Methods: Role of Surface Roughness,” *Journal of Colloid & Interface Science*, 581, pp. 690–697, 2021, (IF= 9.956) <https://doi.org/10.1016/j.jcis.2020.07.098>.
13. Das, M., Ganguly, R., Datta, A., Verma, M.M., Bera, A.K., "Performance improvement of a domestic Liquefied Petroleum Gas cook stove using an extended spill-tray and an annular metal insert," *Journal of Thermal Science and Engineering Applications*, 13(2), pp. 021016 (1—10), 2021, (IF= 1.47) <https://doi.org/10.1115/1.4047525>.
14. Gukeh, M.J., Roy, T., Sen, U., Ganguly, R., Megaridis, C.M., “Lateral spreading of gas bubbles on submerged wettability-confined tracks,” *Langmuir*, 36 (40), pp. 11829-11835, 2020, (IF= 4.331) <https://doi.org/10.1021/acs.langmuir.0c01719>.
15. Ghosh, R., Patra, C., Singh, P., Ganguly, R., Sahu, R.P., Zhitomirsky, I., Puri, I.K., “Influence of metal mesh wettability on fog harvesting in industrial cooling towers,” *Applied Thermal Engineering*, 181, pp. 115963 (1- 14), 2020, (IF= 6.465) <https://doi.org/10.1016/j.applthermaleng.2020.115963>.
16. Ray, S., Ganguly, R., “Evolution of nanoliter size fluid droplet on micropatterned surface,” *Sādhanā*, 45, pp. 220 (1 – 10), 2020. <https://doi.org/10.1007/s12046-020-01461-8>, (IF= 1.188).
17. Datta, A., Singh, V.K., Das, C., Halder, A., Ghoshal, D., Ganguly, R., “Fabrication and characterization of transparent, self-cleaning glass covers for solar photovoltaic cells.” *Materials Letters*, 277, pp. 128350(1—4), 2020, (IF= 3.423) <https://doi.org/10.1016/j.matlet.2020.128350>.
18. Sen, U., Roy, T., Ganguly, R., Angeloni, L.A., Schroeder W.A., Megaridis, C.M., "Explosive behavior during binary-droplet impact on superheated substrates," *International Journal of Heat and Mass Transfer*, 154, 119658, 2020, (IF= 5.584) <https://doi.org/10.1016/j.ijheatmasstransfer.2020.119658>.

19. Ghosh, R., Ganguly, R., "Fog harvesting from cooling towers using metal mesh: Effects of aerodynamic, deposition and drainage efficiencies," Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, 234, pp. 994 – 1014, 2020, (IF= 2.21) <https://doi.org/10.1177/0957650919890711>.
20. Ghosh, R., Sahu, R.P., Ganguly, R., Zhitomirsky, I., Puri, I.K., "Photocatalytic activity of electrophoretically deposited TiO₂ and ZnO nanoparticles on fog harvesting meshes," Ceramics International, 46, pp. 3777 – 3785, 2020, (IF= 4.47) <https://doi.org/10.1016/j.ceramint.2019.10.100>.
21. Dey, S., Das, M., Ganguly, R., Datta, A., "Computational fluid dynamic analyses of flow and combustion in a domestic LPG cook stove burner: Part I – Design optimization of mixing tube-burner assembly," Journal of Thermal Science and Engineering Applications, Transactions of ASME, 12, 031010, pp. (1 – 7) 2020, (IF= 1.47) <https://doi.org/10.1115/1.4044860>.
22. Das, M., Ganguly, R., Datta, A., Verma, M.M., Bera, A.K., "Computational fluid dynamic analyses of flow and combustion in a domestic LPG cook stove burner: Part II – Burning characteristics and overall performance," Journal of Thermal Science and Engineering Applications, Transactions of ASME, 12, 031011, pp. (1 – 8) 2020, (IF= 1.47) <https://doi.org/10.1115/1.4044861>.
23. Sen, U., Roy, T., Chatterjee, S., Ganguly, R., Megaridis, C.M., "Post-impact behavior of a droplet impacting on a permeable metal mesh with a sharp wettability step," Langmuir, 35, pp. 12711-12721, 2019, (IF= 3.557) <https://doi.org/10.1021/acs.langmuir.9b02486>.
24. Gupta, R., Das, C., Datta, A., Ganguly, R., "Background oriented Schlieren (BOS) imaging of condensation from humid air on wettability-engineered surfaces," Experimental Thermal and Fluid Science, 109, 109859, 2019, (IF= 4.02) <https://doi.org/10.1016/j.expthermflusci.2019.109859>.
25. Sen, U., Chatterjee, S., Crockett, J., Ganguly, R., Yu, L., Megaridis, C.M., "Orthogonal liquid-jet impingement on wettability-patterned impermeable substrates," Physical Review Fluids, 4, 014002, 2019, (IF= 2.512) <https://doi.org/10.1103/PhysRevFluids.4.014002>.
26. Koukoravas, T.P., Ghosh, A., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Wettability-confined liquid-film convective cooling: Parameter study." International

- Journal of Heat and Mass Transfer, 126, pp. 667-676, 2018, (IF= 2.512) <https://doi.org/10.1016/j.ijheatmasstransfer.2018.05.057>.
27. Chatterjee, S., Mahapatra, P.S., Ibrahim, A., Ganguly, R., Yu, L., Dodge, R., Megaridis, C.M., "Precise liquid transport on and through thin porous materials," Langmuir, 34, pp. 2865-2875, 2018, (IF= 3.683) <https://doi.org/10.1021/acs.langmuir.7b04093>.
 28. Sen, U., Chatterjee, S., Ganguly, R., Dodge, R., Yu, L., Megaridis, C.M., "Scaling laws in directional spreading of droplets on wettability-confined diverging tracks," Langmuir, 34, pp. 1899-1907, 2018, (IF= 3.683) <https://doi.org/10.1021/acs.langmuir.7b03896>.
 29. Sen, U., Chatterjee, S., Mahapatra, P.S., Ganguly, R., Dodge, R., Yu, L., Megaridis, C.M., "Surface-wettability patterning for distributing high-momentum water jets on porous polymeric substrates," ACS Applied Materials & Interfaces, 10, pp. 5038–5049, 2018, (IF= 8.097) <https://doi.org/10.1021/acsami.7b13744>.
 30. Das, P.K., Mallick, A.K., Ganguly, R., Santra, A.K., "Stability and thermophysical measurements of TiO₂ (anatase) nanofluids with different surfactants," Journal of Molecular Liquids, 254, pp. 98-107, 2018, (IF= 4.77) <https://doi.org/10.1016/j.molliq.2018.01.075>.
 31. Gupta, T., Ghosh, R. and Ganguly, R., "Acoustophoretic separation of infected erythrocytes from blood plasma in a microfluidic platform using biofunctionalized, matched-impedance layers," International Journal for Numerical Methods in Biomedical Engineering, 34, e2943, 2018, (IF= 2.71) [doi: 10.1002/cnm.2943](https://doi.org/10.1002/cnm.2943), 2018.
 32. Morrissette, J.M., Mahapatra, P.S., Ghosh, A., Ganguly, R., Megaridis, C.M., "Rapid, self-driven liquid mixing on open-surface microfluidic platform," Scientific Reports, 7, 1800 (1-13), 2017, (IF= 4.996).
 33. Zhang, B. J., Ganguly, R., Kim, K.J., Lee, C.Y., "Control of pool boiling heat transfer through photo-induced wettability change of titania nanotube arrayed surface," International Communications in Heat and Mass Transfer, 81: pp. 124 – 130, 2017, (IF= 4.996).
 34. Das, P.K., Islam, N., Santra, A.K., Ganguly, R., "Experimental investigation of thermophysical properties of Al₂O₃–water nanofluid: role of surfactants," Journal of Molecular Liquids, 237, pp 304 – 312, 2017, (IF= 4.74).

35. Samanta, A., Modak, N., Datta, A., Ganguly, R., "Separation of magnetic beads in a hybrid continuous flow microfluidic device," *Journal of Magnetism and Magnetic Materials*, 427, pp. 300 – 305, 2017, **(IF= 2.630)**.
36. Sen, U., Chatterjee, S., Sen, S., Tiwari, M.K., Mukhopadhyay, A., Ganguly, R., "Dynamics of magnetic modulation of ferrofluid droplets for digital microfluidic applications," *Journal of Magnetism and Magnetic Materials*, 421, pp. 165 – 176, 2017, **(IF= 3.046)**.
37. Chakraborty, D., Dutta, S., Chakraborty, N., Ganguly, R., "Magnetically actuated transport of ferrofluid droplets over micro-coil array on a digital microfluidic platform," *Sensors & Actuators B: Chemical*, 236, pp. 367-377, 2016, **(IF= 5.70)**.
38. Samanta, A., Modak, N., Datta, A., Ganguly, R., "Operating regimes of a magnetic split- flow thin (SPLITT) fractionation microfluidic device for immunomagnetic separation," *Microfluidics and Nanofluidics*, 20, 87 (1-13), 2016, **(IF= 2.344)**.
39. Das, P.K., Mallik, A.K., Ganguly, R., Santra, A.K., "Synthesis and characterization of TiO₂-water nanofluids with different surfactants," *International Communications in Heat and Mass Transfer*, 75, pp 341–348, 2016, **(IF= 3.97)**.
40. Koukoravas, T.P., Ghosh, A., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Spatially-selective cooling by liquid jet impinging orthogonally on a wettability-patterned surface," *International Journal of Heat and Mass Transfer*, 95, pp. 142-152, 2016, **(IF= 3.458)**.
41. Mahapatra, P.S., Ghosh, A., Ganguly, R., Megaridis, C.M., "Key design and operating parameters for enhancing dropwise condensation through wettability patterning," *International Journal of Heat and Mass Transfer*, 92, pp. 877–883, 2016, **(IF= 5.431)**.
42. Ghosh, R., Ray, T.K., Ganguly, R., "Cooling tower fog harvesting in power plants - A pilot study," *Energy*, 89, pp. 1018 – 1028, 2015, **(IF= 4.968)**.
43. Patra, J., Ghosh, P., Datta, A., Das, M., Ganguly, R., Sen, S., Chatterjee, S., Studies of combustion characteristics of kerosene ethanol blends in an axi-symmetric combustor, *Fuel*, 144,,: pp. 205 – 213, 2015, **(IF= 6.609)**.
44. Modak, N., Datta, A., Ganguly, R., "Immunomagnetic Separation and Transport of Magnetic Beads in Microfluidic Field Flow Fractionation Devices for Bio-MEMS Application," *Procedia Engineering*, 127: pp. 1243–1249, 2015.
45. Ghosh, A., Beaini, S., Zhang, B.- J., Ganguly, R., Megaridis, C.M., "Enhancing dropwise condensation through bioinspired wettability patterning," *Langmuir*, 30 (43), pp. 13103 – 13115, 2014, **(IF= 4.384)**.

46. Song J, Huang S, Lu Y, Bu X, Mates JE, Ghosh A, Ganguly, R., Carmalt CJ, Parkin IP, Xu W, Megaridis CM, Self-Driven One-Step Oil Removal from Oil Spill on Water via Selective-Wettability Steel Mesh, *ACS Applied Materials & Interfaces* 6 (22), pp. 19858 – 19865, 2014, **(IF= 6.998)**.
47. Attinger, D., Frankiewicz, C., Betz, A., Schutzius, T. M., Ganguly, R., Das, A., Kim, C.-J., Megaridis, C.M., “Surface Engineering for Phase Change Heat Transfer: A Review,” *MRS Energy and Sustainability*, 1, pp. E4(1 – 40), 2014.
48. Ghosh, A., Ganguly, R., Schutzius, T., Megaridis, C.M., “Wettability patterning for high-rate, pumpless fluid transport on open, non-planar microfluidic platforms,” *Lab on a Chip*, 14(9), pp. 1538 – 1550, 2014 **(IF= 6.40)**.
49. Puri, I.K., Ganguly, R., “Particle transport in therapeutic magnetic fields,” *Annual Review of Fluid Mechanics*, 46, pp.407 - 440, 2014, **(IF= 14.814)**.
50. Bhattacharya, S., Dhar, P., Das, S.K., Ganguly, R., Webster, T.J., Nayar, S., “Colloidal graphite/graphene nanostructures using collagen showing enhanced thermal conductivity,” *International Journal of Nanomedicine*, 9: pp. 1287 – 1298, 2014.
51. Bose, S., Datta, A., Ganguly, R., Banerjee, M., “Lagrangian magnetic particle tracking through stenosed artery under pulsatile flow condition,” *ASME Journal of Nanotechnology in Engineering and Medicine*, 4(3), pp. 031006, 2014.
52. Sinha, A., Mollah, A.K., Hardt, S., Ganguly, R., “Particle dynamics and separation at liquid-liquid interface,” *Soft Matter*, 9, pp. 5438 - 5447, 2013.
53. Modak, N., Datta, A., Ganguly, R., “Influence of microchannel geometry on magnetophoretic separation of functionalized magnetic beads in a microfluidic sorter and a field flow fractionation device,” *Magnetohydrodynamics*, 49 (3-4), pp. 391–396, 2013.
54. Das, K., Sarkar, M., Mukhopadhyay, A., Ganguly, R., “Transient response of ferrofluid plug-driven micropump,” *Magnetohydrodynamics*, 49 (3-4), pp. 499–504, 2013.
55. Ray, T.K., Ganguly, R., Gupta, A., “Optimal control strategy for minimization of exergy destruction in boiler superheater,” *Energy Conversion and Management*, 66, pp. 234-245, 2013.
56. Basak, A., Patra, J., Ganguly, R., Datta, A., “Effect of transesterification of vegetable oil on liquid flow number and spray cone angle for pressure and twin fluid atomizers,” *Fuel*, 112, pp. 347 - 354, 2013.

57. Modak, N., Pal, A.R., Datta, A., Ganguly, R., “Bioseparation in a microfluidic channel using magnetic field flow fractionation,” *International Journal of Micro-Nano Scale Transport*, 3, pp. 21 - 34, 2012.
58. Banerjee, U., Bit, P., Ganguly, R., Hardt, S., “Aggregation dynamics of particles in a microchannel due to an applied magnetic field,” *Microfluidics and Nanofluidics*, 13, pp. 565 – 577, 2012.
59. Banerjee, M. K., Ganguly, R., Datta, A., “Effect of pulsatile flow waveform and Womersley number on the flow in stenosed arterial geometry,” *ISRN Biomathematics*, 2012, 2012, Article ID 853056, 1 – 17, 2012.
60. Pal, S., Datta, A., Mukhopadhyay, A., Sen, S., Bandyopadhyay, K., Ganguly, R., “Characterization of a ferrofluid-based thermomagnetic pump for microfluidic applications,” *Journal of Magnetism and Magnetic Materials*, 323 (21), pp. 2701-2709, 2011.
61. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., “Effects of magnetization saturation on thermomagnetic convection in a locally heated square enclosure,” *Numerical Heat Transfer: Part A*, 59 (9), pp. 693-718, 2011.
62. Liangruksa, M., Ganguly, R., Puri, I.K., “Parametric investigation of heating due to magnetic fluid hyperthermia in a tumor with blood perfusion,” *Journal of Magnetism and Magnetic Materials*, 323, pp. 708-716, 2011.
63. Modak, N., Datta, A., Ganguly, R., “Numerical Analysis of Transport and Binding of a Target Analyte and Functionalized Magnetic Microspheres in a Microfluidic Immunoassay,” *Journal of Physics D: Applied Physics*, 43, pp. 485002(1-12), 2010.
64. Kappiyoor, R., Liangruska, M., Ganguly, R., Puri, I.K., “The effects of magnetic nanoparticle properties on magnetic fluid hyperthermia,” *Journal of Applied Physics*, 108, pp. 094702(1–8), 2010.
65. Banerjee, M.K., Datta, A., Ganguly, R., “Magnetic drug targeting in partly occluded blood vessels using magnetic microspheres,” *ASME Journal of Nanotechnology in Engineering and Medicine*, 1, 041005 (1-9), 2010.
66. Banerjee, M.K., Ganguly, R., Datta, A., “Hemodynamics in Stenosed Arteries–Effect of Stenosis Shapes,” *International Journal of Computational Methods*, 7 (3), pp. 397-419, 2010.
67. Banerjee, M.K., Ganguly, R., Datta, A. “Variation of wall shear stress and flow characteristics across cosine shaped stenotic model with flow Reynolds number and

- degree of stenosis,” *International Journal of Fluid Mechanics Research* 37 (6), pp. 530-552, 2010.
68. Ganguly, R., Hahn, T., Hardt, S., “Magnetophoretic mixing for in-situ immunochemical binding on magnetic beads in a microfluidic channel,” *Microfluidics and Nanofluidics*, 8, pp. 739–753, 2010.
69. Ganguly, R., Puri, I.K., “Microfluidic Transport in Magnetic MEMS and BioMEMS,” *WIREs Nanomedicine & Nanobiotechnology*, 2, pp. 382-399, 2010.
70. Samanta, A., Ganguly, R., Datta, A., Effect of CO₂ dilution on flame structure and soot and NO formations in CH₄-air non-premixed flames, *ASME Journal of Engineering for Gas Turbine and Power*, 132 (12), pp. 124501(1-5), 2010.
71. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., “Effects of dipole position on thermomagnetic convection in a locally heated shallow enclosure: thermodynamic and transport Analysis,” *Numerical Heat Transfer: Part A*, 57 (7), pp. 496-519, 2010.
72. Ray, T.K., Datta, A., Gupta, A., Ganguly, R., “Exergy-based performance analysis for proper O&M decisions in a steam power plant,” *Energy Conversion and Management*, 51 (6), pp. 1333-1344, 2010.
73. Sinha, A., Ganguly, R., Puri, I.K., “Numerical investigation of flow-through immunoassay in a microchannel,” *Journal of Applied Physics*, 107, 107 (3), 034907, 2010 (This article has been selected for the February 15, 2010 issue of *Virtual Journal of Biological Physics Research* <<http://www.vjbio.org>>).
74. Datta, A., Ganguly, R., Sarkar, L., “Energy and Exergy Analyses of an Externally Fired Gas Turbine (EFGT) Cycle Integrated with Biomass Gasifier for Distributed Power Generation,” *Energy*, 35, pp. 341–350, 2010.
75. Modak, N., Kejriwal, D., Nandy, K., Datta, A., Ganguly, R., “Experimental and Numerical Characterization of Magnetophoretic Separation for MEMS-based Biosensor Applications,” *Biomedical Microdevices*, 12, pp. 23 – 34, 2010.
76. Santra, A., Chakraborty, N., Ganguly, R., “Analytical evaluation of magnetic field by planar micro-electromagnet spirals for MEMS applications,” *Journal of Micromechanics and Microengineering*, 19, pp. 085018(1-10), 2009.
77. Banerjee, M., Ganguly, R., Datta, A., “Study on pressure drop and center line velocity distribution across cosine shaped stenotic model,” *International Journal of Fluid Mechanics Research*, 36, pp. 319-342, 2009.

78. Banerjee, M., Ganguly, R., Datta, A., "Effect of restriction and flow Reynolds number to study the variation of hemodynamic parameters across cosine shaped stenotic model," *International Journal of Computational Methods*, 6, pp. 199-228, 2009.
79. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., "Thermomagnetic convection in square and shallow enclosures for electronics cooling," *Numerical Heat Transfer: Part A*, 55, pp. 931-951, 2009.
80. Sinha, A., Ganguly, R., Puri, I.K., "Magnetic separation from superparamagnetic particle suspensions," *Journal of Magnetism and Magnetic Materials*, 321, pp. 2251-2256, 2009.
81. Roy, T., Sinha, A., Chakraborty, S., Ganguly, R., Puri, I.K., "Magnetic microsphere-based mixers for micro-droplets," *Physics of Fluids*, 21, pp. 027101(1-7), 2009.
82. Modak, N., Datta, A., Ganguly, R., "Cell separation in a microfluidic channel using magnetic microspheres," *Microfluidics and Nanofluidics*, 6, pp. 647-660, 2009.
83. Sahu, K.B., Kundu, A., Ganguly, R., Datta, A., "Effects of fuel type and equivalence ratios on the flickering of triple flames," *Combustion and Flame*, 156, pp. 484-493, 2009.
84. Basu, D., Saha, R., Ganguly, R., Datta, A., "Performance Improvement of LPG Cookstoves through Burner and Nozzle Modifications," *Journal of the Energy Institute*, 81, pp. 218-225, 2008.
85. Banerjee, M., Nag, D., Ganguly, R., Datta, A., "Stenotic interaction on hemodynamic parameters in multiple stenoses," *International Journal of Computational Fluid Dynamics*, 22, pp. 609-622, 2008.
86. Nandy, K., Chaudhuri, S., Ganguly, R., Puri, I.K., "Analytical model for the magnetophoretic capture of magnetic microspheres in microfluidic devices," *Journal of Magnetism and Magnetic Materials*, 320, pp. 1398-1405, 2008.
87. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., "Natural Convection in a Bi-heater Configuration of Passive Electronic Cooling," *International Journal of Thermal Sciences*, 47, pp. 1516-1527, 2008.
88. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., "Optimizing thermomagnetic convection for electronics cooling," *Numerical Heat Transfer: Part A*, 53, pp. 1231-1255, 2008.
89. Saha, C., Ganguly, R., Datta, A., "Heat transfer and emission characteristics of impinging rich methane and ethylene jet flames," *Experimental Heat Transfer*, 21, pp. 169-187, 2008.

90. Sinha, A., Ganguly, R., De, A.K., Puri, I. K., “Single magnetic particle dynamics in a microchannel,” *Physics of Fluids*, 19, pp. 117102(1-5), 2007 (This article has been selected for the November 15, 2007 issue of *Virtual Journal of Biological Physics Research* <<http://www.vjbio.org>>).
91. Ganguly, R., Puri, I. K., “Field-Assisted Self-Assembly of Superparamagnetic Nanoparticles for Biomedical, MEMS and BioMEMS Applications,” *Advances in Applied Mechanics*, 41, pp. 293-335, 2007.
92. Ganguly, R., Puri, I. K., “Mathematical Model for the Chemotherapeutic Drug Efficacy in Arresting Tumor Growth Based on the Cancer Stem Cell Hypothesis,” *Cell Proliferation*, 40, pp. 338–354, 2007.
93. Ganguly, R., Puri, I. K., “Mathematical Modeling of Cancer Stem Cell Hypothesis,” *Cell Proliferation*, 39, pp. 3-14, 2006.
94. Ganguly, R., Zellmer B., Puri, I. K., “Field-induced self-assembled ferrofluid aggregation in pulsatile flow,” *Physics of Fluids*, 17, pp. 097104(1-8), 2005. (This article has been selected for the September 12, 2005 issue of *Virtual Journal of Nanoscale Science & Technology* <<http://www.vjnano.org>>, and September 15, 2005 issue of *Virtual Journal of Biological Physics Research* <<http://www.vjbio.org>>).
95. Ganguly, R., Gaiind, A.P., Puri I. K., “A strategy for the assembly of 3-D mesoscopic structures using a ferrofluid,” *Physics of Fluids*, 17, pp. 57103(1—9), 2005. (This article has been selected for the May 9, 2005 issue of *Virtual Journal of Nanoscale Science & Technology* <<http://www.vjnano.org>>).
96. Mukhopadhyay, A., Ganguly, R., Sen, S., Puri I. K., “Scaling Analysis to Characterize Thermomagnetic Convection,” *International Journal of Heat and Mass Transfer*, 48 (17), pp. 3485-3492, 2005.
97. Ganguly, R., Gaiind, A.P., Sen, S., Puri I. K., “Analyzing ferrofluid transport in magnetic drug targeting,” *Journal of Magnetism and Magnetic Materials*, 289, pp. 331-334, 2005.
98. Lock, A., Ganguly, R., Puri, I. K., Aggarwal, S. K., Hegde, U., “Gravity Effects on Partially Premixed Flames: An Experimental-Numerical Investigation,” *Proceedings of the Combustion Institute*, 30(1), pp. 511-518, 2005.
99. Sinha, A., Ganguly, R., Puri, I. K. “Control of Confined Nonpremixed Flames Using a Microjet,” *International Journal of Heat and Fluid Flow*, 26, pp. 431-439, 2005.
100. Ganguly, R., Sen, S., Puri, I. K. (2004), “Thermomagnetic Convection in a Square Enclosure Using a Line-Dipole,” *Physics of Fluids*, 16(7), pp. 2228-2236, 2004.

101. Ganguly, R., Sen, S., Puri, I. K., "Heat Transfer Augmentation in a Channel With a Magnetic Fluid Under the Influence of a Line-Dipole," *Journal of Magnetism and Magnetic Materials*, 271, pp. 63-73, 2004.
102. Ganguly, R., Puri, I. K., "Nonpremixed Flame Control with Microjets," *Experiments in Fluids*, 36, pp. 635-641, 2004.
103. Gupta, A., Ganguly, R., Chakraborty, S., Mazumdar, C., Popovic, D., "Simulating Thermal Power Plant Processes on a Message Passing Environment," *ISA Transaction, American Institute of Physics*, 42 (4), pp. 615-630, 2003.

Book Chapters and Edited volumes

1. Das, C., Ghosh, R., Datta, A., Ganguly, R., "Wettability-engineering: A skin-deep approach of solving the energy-water nexus" In: *Advances in Multiphase Flows*. Editors: Gupta, A.K., De, A.K., Begell House Inc. ISBN: 978-1-56700-504-2, 2022.
2. Banerjee S., Ganguly R. "Simulation of Biomagnetic Fluid Flow in a Lid-Driven Cavity Under Steady Localized Magnetic Field," In: *Advances in Bioprocess Engineering and Technology*. Editors: Ramkrishna D., Sengupta S., Dey Bandyopadhyay S., Ghosh A. (eds). *Lecture Notes in Bioengineering*. Springer, Singapore. https://doi.org/10.1007/978-981-15-7409-2_42, 2021.
3. Thomas, T.M., Mahapatra, P.S., Vedarajan, R., Ganguly, R., "Multiphase Flow its Application in Water Management and Harvesting in Fuel Cells," in *Two-Phase Flow for Automotive and Power Generation Sectors*, Editors: Saha, K., Agarwal, A.K., Ghosh, K., Som, S., Springer, ISBN 978-981-13-3256-2 , pp 249-285, 2019.
4. Ghosh, R., Ganguly, R., "Harvesting Water from Natural and Industrial Fogs— Opportunities and Challenges," in *Applications Paradigms of Droplet and Spray Transport: Paradigms and Applications, Energy, Environment, and Sustainability*, Editors: Basu, S, Agarwal, A.K., Mukhopadhyay, A., Patel, C, Springer, Buy eBook ISBN 978-981-10-7233-8, pp 237 – 266, 2018.
5. Samanta, A., Ganguly, R., Datta, A. Modak, N., "On-Chip Microfluidic Separation of Biological Entities in Field Flow Fractionation and Split Flow Thin Fractionation Devices," in *Fluid Mechanics and Fluid Power – Contemporary Research, Lecture Notes in Mechanical Engineering*, (eds. A.K. Saha et al.), pp. 1361-1369, ISBN 978-81-322-2741-0, Springer India, 2017.

6. Ray, D., Mukhopadhyay, A., Ganguly, R., "Flow in thermomagnetic energy conversion loops," in Fluid Mechanics and Fluid Power – Contemporary Research. Lecture Notes in Mechanical Engineering, Part F8, Edited by Saha A., Das D., Srivastava R., Panigrahi P., Muralidhar K., Springer, New Delhi, ISBN 978-81-322-2743-4, pp. 1585-1594, 2016.
7. Chatterjee, S., Bhowmik, D., Mukhopadhyay, A., Ganguly, R., "Analysis of static and dynamic contact angles of ferrofluid droplets for magnetically actuated micropumps," in Fluid Mechanics and Fluid Power – Contemporary Research. Lecture Notes in Mechanical Engineering, Part F8, Edited by Saha A., Das D., Srivastava R., Panigrahi P., Muralidhar K., Springer, New Delhi, ISBN 978-81-322-2743-4, pp. 1341-1349, 2016.
8. Ganguly, R., Sinha, A., Puri I.K., "Magnetic Particle-based Microfluidics," Microfluidics and Nanofluidics Handbook, Edited by Sushanta K. Mitra, Suman Chakraborty, Volume Two: Fabrication, Implementation and Applications, : 978-1-43-981672-1., CRC Press, Taylor and Francis Group, 2012.

National Journal

1. Datta, A., Das, M., Ganguly, R., Design, development, and technological advancements in gas burners for domestic cook stoves: a review, Transactions of the Indian National Academy of Engineering 6 (3), 569-593, 2021.
2. Sarkar, S., Mukhopadhyay, A., Sen, S., Mondal, S., Banerjee, A., Mandal, P., Ghosh, R., Megaridis, C.M., Ganguly, R., "Leveraging wettability engineering to develop three-layer DIY face masks from low-cost materials," Transactions of the Indian National Academy of Engineering, 5, pp. 393–398. 2020.
3. Sinha Mahapatra, P.S., Chatterjee, S., Tiwari, M., Ganguly, R., Megaridis, C.M., "Surface treatment to enhance the functionality of PPEs," Transactions of the Indian National Academy of Engineering, 5, pp. 333–336. 2020.
4. Modak, N., Kejriwal, D., Roy, T., Nandy, K., Datta, A., Ganguly, R., "Microfluidic transport of magnetic microspheres for bioMEMS applications," Annals of the Indian National Academy of Engineering, IV, 163-169, 2009.

Proceedings Publication/ Conference Presentation

1. Datta, A., Mukhopadhyay, A., Dutta, P.S., Saha, A., Datta, A., Ganguly, R. "Droplet detachment from a horizontal fiber of a fog harvesting mesh", 48th National Conference

- on Fluid Mechanics and Fluid Power, Dec. 27—29, 2021, BITS Pilani, India. Received Prof. BVSSS Prasad Memorial Best Paper Award.
2. Mukhopadhyay, A., Dutta, P.S., Datta, A., Ganguly, R. “Liquid droplet morphology on the fiber of a fog harvester mesh and the droplet detachment conditions under gravity”, 8th International and 47th National Conference on Fluid Mechanics and Fluid Power, Dec. 9—11, 2020, IIT Guwahati, India. Received Dr. M.G. Deshpande Memorial Award for the best paper from Academia
 3. Das, C, Halder, S., Datta, A., Ganguly, R., “Effect of surface wettability on vapor condensation in presence of non-condensable gas with different free stream velocity”, Proceedings of the International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES – 2020] NIT Rourkela, India, 10-12 February 2020, Received the best paper award.
 4. Mukhopadhyay, A., Sardar, K., Datta, A., Akhtar, J., Tudu, B., Ganguly, R., “Temperature Control of a Single Basin Solar Still and Data Acquisition for Efficient Parametric Analysis,” Proceedings of International Conference on Energy and Sustainable Development, Jadavpur University and Institute of Engineers, February 14-15, 2020.
 5. Roy, I., Das, C., Datta, A., Ganguly, R., “Quantitative Schlieren imaging in phase-change heat transfer with transient subcooling”. Proceedings of the International Conference on Innovations in Thermo-Fluid Engineering and Sciences [ICITFES – 2020] NIT Rourkela, India, 10-12 February 2020.
 6. Datta, A., Das, C. Ganguly, R., “Collection efficiency study by changing surface wettability of collector plate in a solar still test rig”, *Paper No. ENE 911, 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMT-2019), 28-31 December 2019.*
 7. Roy, T., Sen, U., Ganguly, R., Angeloni, L.A., Schroeder, C.A., Megaridis, C.M., “Explosive events in bicomponent droplet impact on superheated substrates,” 72nd Annual Meeting of the APS Division of Fluid Dynamics 2019, 23-26 November, Seattle, WA, USA.

8. Sen, U., Crockett, J.C., Ganguly, R., Megaridis, C.M., “Jet impingement on wettability-patterned surfaces,” 71st Annual Meeting of the APS Division of Fluid Dynamics 2018, 18-20 November, Atlanta, GA, USA.
9. Megaridis, C.M., Sen, U., Chatterjee, S., Sinha Mahapatra, P., Ganguly, R., “Wettability patterning for managing liquid jets striking porous substrates,” 71st Annual Meeting of the APS Division of Fluid Dynamics 2018, 18-20 November, Atlanta, GA, USA.
10. Sen, U. Chatterjee, S., Ganguly, R., Megaridis, C.M., “Catapulting impacting droplets via a wettability-patterned metal mesh,” 71st Annual Meeting of the APS Division of Fluid Dynamics 2018, 18-20 November, Atlanta, GA, USA.
11. Jafari Gukeh, M., Sen, U., Ganguly, R., Megaridis, C.M., “Pumpless, directional transport of gas bubbles on wettability-patterned diverging tracks,” 71st Annual Meeting of the APS Division of Fluid Dynamics 2018, 18-20 November, Atlanta, GA, USA.
12. Ray, S., Ganguly, R., “Evolution of nanoliter size fluid droplet on micropatterned surface,” Proceedings of the 1st International Conference on Mechanical Engineering, Jan 4-6, 2018, Kolkata (Paper No. INCOM18-238).
13. Banerjee, G., Datta, A., Ganguly, R., “Imaging and analysis of condensation in presence of noncondensable gases – effect of surface wettability,” Proceedings of the 1st International Conference on Mechanical Engineering, Jan 4-6, 2018, Kolkata (Paper No. INCOM18-234).
14. Samanta, A., Ganguly, R., Datta, A., Modak, N., “Theoretical modelling of transport of magnetic microspheres in an aqueous two phase system (ATPS) in a microchannel,” Proceedings of the 1st International Conference on Mechanical Engineering, Jan 4-6, 2018, Kolkata. (Paper No. INCOM18-191).
15. Gupta, R., Das, C., Roy, A., Datta, A., Ganguly, R.. “Arduino based Temperature and Humidity Control for Condensation on Wettability Engineered Surfaces”. 1st International Conference on Electronics Devices and Computational Techniques (IEEE). 8th -9th March, 2018. GNIT, Kolkata, India. IEEE *Xplore* Link: <https://ieeexplore.ieee.org/document/8405062/>. DOI: [10.1109/EDCT.2018.8405062](https://doi.org/10.1109/EDCT.2018.8405062), (Received the Best Paper Award)

16. Das, C., Roy, A., Datta A., Ganguly, R., Mukhopadhyay, D., Bandyopadhyay, K., "Effect of surface wettability on condensation heat transfer in presence of non-condensable gas," Proceedings of the 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (*IHMTC*), 27-30 December, 2017, Hyderabad, India, Paper no. IHMTC2017-13-1264 (received the *PK Sarma Best Paper Award*).
17. Das, P.K., Islam, N., Zakaria, K., Roy, B., Santra, A.K., and Ganguly, R., "Measurement of surface tension and contact angle of different nanofluids: an experimental study", Proceedings of the 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (*IHMTC*), 27-30 December, 2017, Hyderabad, India, Paper no. IHMTC2017-19-1406.
18. Sen U., Chatterjee, S., Ganguly, R., Megaridis, C.M., Universal scales of droplet spreading on wettability-patterned wedge tracks, Bulletin of the American Physical Society, 70th Annual Meeting of the APS Division of Fluid Dynamics, November 19–21, 2017; Denver, Colorado, Abstract ID: 62.M11.00006.
19. Koukoravas, T., Ghosh, A., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Liquid jet impinging orthogonally on a wettability-patterned surface." APS Meeting, 2016. Oregon, Portland, Abstract ID: H11.001
20. Ghosh, A., Brenner, K., Chatterjee, S., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Analysis of pumpless liquid transport on a wettability-patterned track." In APS Meeting Abstracts. 2016.Oregon, Portland, Abstract ID: D37.002
21. Ghosh, A., Chatterjee, S., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Directional transport of impinging capillary jet on wettability engineered surfaces," 68th Annual Meeting of the APS Division of Fluid Dynamics Volume 60, Number 21, Nov. 22 – 24, 2015, Boston, MA, USA, Abstract ID: H5.00007.
22. Mahapatra, P.S., Ghosh, A., Ganguly, R., Megaridis, C.M., "Enhanced condensation heat transfer with wettability patterning," 68th Annual Meeting of the APS Division of Fluid Dynamics Volume 60, Number 21, Nov. 22 – 24, 2015, Boston, MA, USA, Abstract ID: G35.00008.
23. Morrissette, J.M., Mahapatra, P.S., Ganguly, R., Megaridis, C.M., "Enhancing Liquid Micro-volume Mixing with Wettability-Patterned Surfaces," 68th Annual Meeting of the

APS Division of Fluid Dynamics Volume 60, Number 21, Nov. 22 – 24, 2015, Boston, MA, USA, Abstract ID: E13.00004.

24. Das, P. K., Santra, A. K., and Ganguly, R., "Performance analysis of direct absorption solar collector using multiphase model", Proceedings of the 23rd National Heat and Mass Transfer Conference and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference (*IHMTC*), 17-20 December, 2015, Thiruvananthapuram, India.
25. Das, P. K., Santra, A.K., and Ganguly, R., "Numerical investigation of heat transfer coefficient of nanofluids flow through a vertical pipe", International Conference on Advanced Materials and Energy Technology (*ICAMET-2014*) December 17-19, 2014, BESU West Bengal.
26. Morrissette, J.M., Rabatah, Z., Ghosh, A., Megaridis, C.M., Ganguly, R., "Capillarity-driven Surface Microfluidic Transport using Wettability-patterned Substrates," Proc. of *5th International and 41st National Conference on Fluid Mechanics and Fluid Power*, FMFP14, Paper No. 579, December 2014.
27. Chatterjee, S., Bhowmik, D., Mukhopadhyay, A., Ganguly, R., "Analysis of static and dynamic contact angles of ferrofluid droplets for magnetically actuated micropumps," Proc. of *5th International and 41st National Conference on Fluid Mechanics and Fluid Power*, FMFP14, Paper No. 466, December 2014.
28. Ray, D., Mukhopadhyay, A., Ganguly, R., "Flow in thermomagnetic energy conversion loops," Proc. of *5th International and 41st National Conference on Fluid Mechanics and Fluid Power*, FMFP14, Paper No. 469, December 2014.
29. Samanta, A., Ganguly, R., Datta, A., Modak, N., "On-chip microfluidic separation of biological entities in field flow fractionation and split flow thin fractionation devices," Proc. of *5th International and 41st National Conference on Fluid Mechanics and Fluid Power*, FMFP14, Paper No. 654, December 2014.
30. Ghosh, A., Ganguly, R., Megaridis, C.M., "Wettability Patterning for Enhanced Dropwise Condensation," 67th Annual Meeting of the APS Division of Fluid Dynamics, Session M13: Drops: Heat Transfer and Evaporation II, San Francisco, CA, Nov. 23 - 25, 2014.

31. Elsharkawy, M., Schutzius, T., Graeber, G., Oreluk, J., Ganguly, R., Megaridis, C.M., “Shaping/Launching Droplets Impacting on Wettability-Patterned Surfaces,” 67th Annual Meeting of the APS Division of Fluid Dynamics, Session G14: Drops: Bouncing, Impact and Dynamic Surface Interactions II, San Francisco, CA, Nov. 23 - 25, 2014.
32. Nath, S., Mukherjee, A., Chatterjee, S., Ganguly, R., Sen, S., Mukhopadhyay, A., Boreyko, J., “Inverse Flootation,” 67th Annual Meeting of the APS Division of Fluid Dynamics, Session G13: Drops: General II, San Francisco, CA, Nov. 23 - 25, 2014.
33. Ghosh, A., Ganguly, R., Megaridis, C.M., “Tuning dropwise condensation using microscale wettability patterns,” 12th International Conference on Nanochannels, Microchannels, and Minichannels, August 3-7, 2014, Chicago, USA, Paper no. FEDSM2014-21714.
34. Ghosh, A., Ganguly, R., Megaridis, C.M., “Substrate-independent wettability-engineered surface microfluidic devices for point of care diagnostics,” 12th International Conference on Nanochannels, Microchannels, and Minichannels, August 3-7, 2014, Chicago, USA, Paper no. FEDSM2014-21710.
35. Modak, N., Guha Niyogi, S., Ganguly, R., Datta, A., “Magnetophoretic SPLITT fractionation for isolation of multiple targets in a microfluidic channel for bioseparation,” Proc. 22nd National and 11th International ISHMT-ASME Heat Mass Transfer Conference, IIT Kharagpur, India, 28-31 December, 2013, Paper No. HMTTC1300450.
36. Ghosh, A., Ganguly, R., Schutzius, T., Megaridis, C.M., “Slide, sweep and vanish: Droplet manipulation by wettability engineering,” 66th Annual Meeting of the APS Division of Fluid Dynamics Volume 58, Number 18, Nov. 24 – 26, 2013, Pittsburg, PA, USA, Paper No. R33: 00001.
37. Chatterjee, S., Bhowmik, D., Mukhopadhyay, A., Ganguly, R., “Static and dynamic contact angles of immersed ferrofluid droplets,” 66th Annual Meeting of the APS Division of Fluid Dynamics Volume 58, Number 18, Nov. 24 – 26, 2013, Pittsburg, PA, USA, Paper No. G33.00005.
38. Hardt, S., Sinha, A., Mollah, A.K., Ganguly, R., “Transport of microspheres across liquid-liquid interfaces,” 66th Annual Meeting of the APS Division of Fluid Dynamics Volume 58, Number 18, Nov. 24 – 26, 2013, Pittsburg, PA, USA, Paper No. G7.00006.

39. Modak, N., Datta, A., Ganguly, R., “Particle transport and separation in microfluidic devices using field flow fractionation,” The 24th International Symposium on Transport Phenomena, Tokyo University of Science, Yamaguchi, 1-5 November 2013, Japan.
40. Modak, N., Datta, A., Ganguly, R., “Microfluidic transport of magnetic particles for bioMEMS applications”, Proc. of National Conference on Advances in Simulation and Optimization Techniques in Mechanical Engineering, Invited Paper, pp: IP 1—24, KIIT University, Bhubaneswar, Feb 18 -19, 2012.
41. Pal, A.R., Modak, N., Datta, A., Ganguly, R., “Bioseparation in a microfluidic channel using field flow fractionation,” Paper No.: ISHMT_IND_14_008, Proc. of the 21st National & 10th ISHMT-ASME Heat and Mass Transfer Conference, IIT Madras, 27-30 December, 2011.
42. Banerjee, U., Bit, P., Ganguly, R., Hardt, S., “Dynamics of field-induced self-aggregation of magnetic microspheres in microfluidic channels,” Paper No.: ISHMT_IND_14_007, Proc. of the 21st National & 10th ISHMT-ASME Heat and Mass Transfer Conference, IIT Madras, 27-30 December, 2011.
43. Ghosh, A., Nandy, A., Ganguly, R., Datta, A., Comparison of Spray Characteristic Between Pressure Atomizer and Air Assist Atomizer, Paper No.: ICME 11-FL-042, Proc. of the Int. Conf. on Mechanical Engg. 2011, Dhaka, Bangladesh, 18-20 December, 2011.
44. Samanta, A., Ganguly, R., Datta, A., Structure and Stabilization Characteristics of Laminar Non-premixed Flames with Upgraded Biogas Fuels, Proceedings of 22nd National Conference on I.C.Engine and Combustion, pp. 387-394, N.I.T. Calicut, 10-13 December, 2011 (*received the Best Paper Award in Combustion*).
45. Ganguly, R., Hahn, T., Hardt, S., “Characterization of magnetic bead-based microfluidic mixing for bio-MEMS applications” Proc. 20th National & 9th Internationals ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, Mumbai, India, pp. 619-626 (*received the PK Sarma Best Paper Award*).
46. Pal, S., Mukhopadhyay, A., Sen, S., Datta, A., Ganguly, R., Bandopadhyay, K., “Experimental study of on-demand thermomagnetic pumps” Proc. 20th National & 9th Internationals ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, Mumbai, India, pp. 355-361.

47. Modak, N., Datta, A., Ganguly, R., “Experimental analysis of magnetophoretic separation in microchannels” Proc. 20th National & 9th Internationals ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, Mumbai, India, pp. 209-215.
48. Banerjee, M.K., Datta, A., Ganguly, R., “Magnetic drug targeting in stenosed arteries using magnetic microspheres” Proc. 20th National & 9th Internationals ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, Mumbai, India, pp. 176-183.
49. Banerjee, S., Mukhopadhyay, Sen, S., Ganguly R., Effects of Saturation Magnetization on Thermomagnetic Convection in a Bi-Heater Configuration, Proc. 20th National & 9th Internationals ISHMT-ASME Heat and Mass Transfer Conference, January 4-6, 2010, Mumbai, India, pp. 311-318.
50. Ray, T.K., Ekbote, P., Ganguly, R., Gupta, A., *Second-Law Analysis in a Steam Power Plant for Minimization of Avoidable Exergy Destruction. Proc. ASME.* 43949; ASME 2010 4th International Conference on Energy Sustainability, Volume 1:859-868. January 01, 2010 (ASME 2010 4th International Conference on Energy Sustainability, Volume 1, Phoenix, Arizona, USA, May 17–22, 2010) doi: 10.1115/ES2010-90144.
51. Liangruksa, M., Ganguly, R., Puri, I.K., Scaling analysis of magnetic fluid hyperthermia, 62nd Annual Meeting of the APS Division of Fluid Dynamics, November 22–24, 2009; Minneapolis, Minnesota, Paper no. PE.00001.
52. Ganguly, R., Hahn, T., Hardt, S., “In-situ immunchemical binding on magnetic beads in a flow-through microfluidic separator,” 2009 Gordon Research Conference on the Physics and Chemistry of Microfluidics, June 28-July 3, Il Ciocco, Italy, 2009.
53. Sinha, A., Ganguly, R., and Puri, I.K., “Characterizing magnetic separation systems for μ -TAS,” Seventh International Conference on the Scientific and Clinical Applications of Magnetic Carriers, June 2008, Vancouver, Canada.
54. Modak, N., Datta, A., Ganguly, R., “Numerical simulation of transport of magnetic microspheres in a bio-MEMS device” Proc. 19th National & 8th ISHMT-ASME Heat and Mass Transfer Conference, January 3-5, 2008, Hyderabad, India, Paper No. 460 (received the VMK Sastry Best Poster Award).
55. Banerjee, S., Mukhopadhyay, Sen, S., Ganguly R., Thermogravitational Convection in a Bi-Heater Configuration of Electronics Cooling, Proc. 19th National & 8th ISHMT-ASME

Heat and Mass Transfer Conference, January 3-5, 2008, Hyderabad, India, Paper No. 456.

56. Nandy, K., Kejriwal, D., Ganguly, R., Characterizing Transport of Magnetic Microspheres in a Microfluidic Separator for BioMEMS Applications. Proc. of 34th National Conference on Fluid Mechanics and Fluid Power, FMFP07- 1124, pp. 942—948, December 2007 (received the Dr. M.G. Deshpande Memorial Award for the best paper from Academic and Research organizations).
57. Banerjee, M., Nag, D., Ganguly, R., Datta, A., Influence of Stenosis on the Steady Laminar Flow of Blood through and Artery. Proc. Of 34th National Conference on Fluid Mechanics and Fluid Power, FMFP07- 1122, pp. 929—935, December 2007.
58. Banerjee, S., Mukhopadhyay, Sen, S., Ganguly R., Optimizing thermomagnetic convection for electronics cooling in a bi-heater configuration. Proc. of 34th National Conference on Fluid Mechanics and Fluid Power, FMFP07- 1079, pp. 615—623, December 2007.
59. Saha, C., Ganguly, R., Datta, A., Structure and Emission Characteristics of Impinging Rich Methane Jet Flames, Proc. Of the 20th National Conference on I.C.Engines and Combustion, Dec. 6-9, 2007, Hyderabad, pp. 85-90.
60. Basu, D., Saha, R., Ganguly, R., Datta, A., Effects of Burner Cap Geometry on the Performance of a Domestic LPG Stove, Proc. Of the 20th National Conference on I.C.Engines and Combustion, Dec. 6-9, 2007, Hyderabad, pp. 561-566.
61. Ray, T.K., Gupta A., Ganguly, R., Exergy Analysis for Performance Optimization of a Steam Turbine Cycle, *IEEE PES Power Africa 2007 Conference and Exposition*, Johannesburg, South Africa, 16-20 July 2007.
62. Nandy, K., Chaudhuri, S., Ganguly, R., Analytical model for tracking of magnetic microspheres in microfluidic devices, *National Workshop on Nanotechnology and Nanoscience of Magnetic Nanoparticles for Biomedical Applications*, January 2007, Bhavnagar, India.
63. Ganguly, R., Sinha, A., Puri, I. K., Self organization of magnetic microspheres and their bioMEMS applications, *National Workshop on Nanotechnology and Nanoscience of Magnetic Nanoparticles for Biomedical Applications*, January 2007, Bhavnagar, India.

64. Banerjee, S., Mukhopadhyay, A., Sen, S., Ganguly, R., Thermomagnetic convection in square cavity with constant flux heating at the bottom wall and isothermal cooling from the sidewalls, *Proc. International Conference on Recent Trends in Nanoscience and Technology*, pp. 239 – 242, 2006.
65. Kundu, A.K., Sahu, K.B., Ganguly, R. and Datta, A., Structure and Dynamics of Triple Flames at Various Equivalence Ratios, *Proc. Eighth National Conference on Air Breathing Engines and Aerospace Propulsion*, 12-14 December, 2006, Pune, pp. 546-552.
66. Ganguly, R., Fundamentals of field-assisted self-assembly, Keynote Lecture, *15th US National Congress of Theoretical and Applied Mechanics*, Boulder, CO, June, 2006.
67. Sinha, A., Ganguly, R. and Puri, I. K., Magnetic Micromanipulation of a Single Magnetic Microsphere in a Microchannel, *Proc. ASME. 47608; ASME 4th International Conference on Nanochannels, Microchannels, and Minichannels, Parts A and B:673-677*. January 01, 2006 (*4th International Conference on Nanochannels, Microchannels and Minichannels*, Limerick, Ireland, June 2006, Paper No. ICNMM2006-96202). doi: 10.1115/ICNMM2006-96202
68. Sinha, A., Ganguly, R., Puri, I. K., Immunomagnetic Separation in Microchannels – From MEMS to BioNEMS, *Proc. ASME. 4224X; Microelectromechanical Systems:27-31*. January 01, 2005 (*ASME International Mechanical Engineering Congress*, Orlando, FL, November 2005, Paper No. IMECE2005-81569). doi: 10.1115/IMECE2005-81569.
69. Ganguly, R., Gaid, A.P. and Puri, I. K., Ferrofluid transport analysis for micro- and meso- scale applications, *Proc. ASME. 47098; Fluids Engineering:65-68*. January 01, 2004 (*ASME International Mechanical Engineering Congress*, Anaheim, CA, November 2004, Paper No. IMECE2004-60045). doi: 10.1115/IMECE2004-60045.
70. Sinha, A., Ganguly, R. and Puri, I. K., Magnetically assembled 3-d mesoscopic patterns using a suspension of superparamagnetic nanoparticles, *Proc. ASME. 41774; Design, Synthesis, and Applications:89-90*. January 01, 2004 (*ASME Integrated Nanosystems— Design, Synthesis and Applications*, Pasadena, CA, September 2004, Paper No. NANO2004-46091). doi: 10.1115/NANO2004-46091

71. Lock, A.J., Ganguly, R., Puri, I. K., Aggarwal, S.K., Hegde, U., Lifted partially premixed flames in microgravity, *AIAA Conference*, Reno, NV, January 2004, Paper No. AIAA-2004-0954.
72. Ganguly, R., Sen, S., Puri I. K., Numerical Investigation of Thermomagnetic Convection in Square Enclosure, *Sixth ISHMT/ASME Heat Mass Transfer Conference*, Kalapakkam, India, January 2004.
73. Ganguly, R., Sen, S., Puri I. K., Enhancement of Heat Transfer in Miniaturized Channels using Ferrohydrodynamic Convection, *Proc. ASME. 37211; Microelectromechanical Systems:501-505*.January 01, 2003 (*ASME International Mechanical Engineering Congress*, November 15-21, 2003, Washington, D.C., Paper No. IMECE2003-41578). doi: 10.1115/IMECE2003-41578
74. Ganguly, R., Sen, S., Puri I. K., Scaling analysis of Thermomagnetic Convection in Square Enclosure, *Proc. 4th Int. Symp. Scale Modeling* (2003) 27-34.
75. Puri, I. K., Aggarwal, S.K., Lock, A.J., Ganguly, R., Hegde, U., Gravity effects observed in partially premixed flames, *Proc. 7th Int. Workshop on Microgravity Combustion and Chemically Reacting Systems* (2003) 253-256.
76. Sinha, A., Ganguly R., Puri, I. K., Optimization of a Microjet Controlled Nonpremixed Flame, *3rd. Joint Meeting of the US Section of Combustion Institute*, Chicago, March 2003.
77. Lock, A. J., Choi, C. W., Ganguly, R., Puri, I. K., Aggarwal, S. K. and Hegde, U., Partially Premixed Flames and Their Characteristics Under Microgravity, *3rd. Joint Meeting of the US Section of Combustion Institute*, Chicago, March 2003.
78. Choi, C. W., Ganguly, R., Lock, A.J., Puri, I. K., Aggarwal, S. K., Hegde, U., Gravity Effects on Partially Premixed Flames, *AIAA Conference*, Reno, NV, January 2003 Paper No. AIAA-2003-0811.
79. Ganguly, R., Mukhopadhyay, A. and Puri, I. K., Control of nonpremixed flames using micro-jets, *Proc. ASME. 36347; Heat Transfer, Volume 3:23-26*.January 01, 2002 (*2002 ASME International Mechanical Engineering Congress*, New Orleans, LA, November 2002, Paper No. IMECE2002-34056). doi: 10.1115/IMECE2002-39054

80. Ganguly, R., Mukhopadhyay, A. and Datta, A., Effects of Microgravity on Laminar Diffusion Flames, *Proc. ASME*. 36347; Heat Transfer, Volume 3:27-30. January 01, 2002 (2002 ASME International Mechanical Engineering Congress, New Orleans, LA, November 2002, Paper No. IMECE2002-34054). doi: 10.1115/IMECE2002-39056
81. Ganguly, R., Puri, I. K., Effect of Micro-jet Injection on Nonpremixed Flames, *Spring Technical Meeting, Central States Section of the Combustion Institute*, Knoxville, TN, April 2002.
82. Ganguly, R., Mukhopadhyay, A., Datta, A., A Numerical Study on Confined Laminar Diffusion Flames under reduced gravity conditions, *Fifth ISHMT/ASME Heat Mass Transfer Conference*, Calcutta, India, January 2002.
83. Ganguly, R., Chakraborty, S., Dattagupta, S., Transient Modeling and Simulation of Steam Turbines in Thermal Power Plants, *International Conference on Future Strategies and Technologies for Development of Thermal Power Plants*, New Delhi, India, December 1999.

SESSIONS CHAIRED

- 15th US National Congress of Theoretical and Applied Mechanics, Boulder, CO, June, 2006. Session title: “Mechanics of Self Assembly.”
- Track 21: 21st National & 10th ISHMT-ASME Heat and Mass Transfer Conference, 2011. Session Title “Computational Heat Transfer.”
- Track K6: 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, FMFP14, December 2014. Session Title “Nuclear Reactor Thermal Hydraulics.”
- Track KN15: 26th National & 4th International ISHMT-ASTFE Heat and Mass Transfer Conference, December 17 – 20, 2021. Session Title “Energy and Environmental System.”
- Plenary Talk 02: 48th National Conference on Fluid Mechanics and Fluid Power, FMFP21, December 2021. Session Title “Prof. Aswatha Narayana Plenary Talk.”

SELECT INVITED TALKS

1. Ganguly, R., Handling Liquid on Surfaces using Wettability Engineering: From Sustainability to Healthcare, AICTE-STTP on Emerging Nano-Materials for Sustainability, MAKAUT, August 30 – September 4, 2021.
2. Ganguly, R., “Dealing the Energy-Water Nexus with a Skin-deep Approach,” International Workshop on Energy, Environment, and Multiphase Flows, IIT Kanpur, February 24 – 26, 2020.
3. Ganguly, R., Megaridis, C.M., “Capillary-driven transport for surface microfluidic platforms – the future of low-cost healthcare,” 13th International Conference on Computational Fluids and Soft Matters (CompFlu-2019), Microfluidics Session, December 5-7, 2019.
4. Ganguly, R., “Capturing water from thin air: each drop counts,” Alexander von Humboldt Foundation Kolleg on Energy Sustainability: A Roadmap for the Future,” February 1-2, 2018.
5. Ganguly, R., "Versatile use of magnetic particles in microfluidics," QIP/CEP- Short Term Course on "Microfluidics based healthcare diagnostics and interfacial phenomena," IIT Madras, Chennai, November 8, 2017.
6. Ganguly, R., Capillary-driven surface microfluidic platform for point-of-care medical diagnostic devices, at Workshop on “Biomechanics, Implants and Related Medical Devices” at IEST, Shibpur, March 2017.
7. Ganguly, R., Microfluidics for the Future of Medicine: Point of Care Diagnostics, PK Nag Memorial Lecture Series, Aliah University, December 2014.
8. Ganguly, R., “Magnetic particle-based microfluidics for MEMS and bioMEMS applications.” Invited poster presentation at the 2nd Indo-German Frontiers of Engineering (INDOGFOE) Symposium, Potsdam, Germany, June 24—27, 2010.
9. Ganguly, R., Hahn, T., Hardt, S., “Development and Characterization of microfluidic mixing and separation units for bioMEMS applications.” Invited oral presentation at the Network Meeting of Alexander von Humboldt Foundation, Münster, Germany, 18—21 November, 2008.

RESEARCH SUPERVISED

Doctoral Research Supervised:

1. **Moloy K Banerjee**: “Analysis of Blood Flow through Stenosed Arteries”, PhD 2010, Jadavpur University (jointly with Prof. A. Datta).
2. **Nipu Modak**: “Transport Analysis of Magnetic Microspheres in Microfluidic Devices for Bio-MEMS Applications”, PhD 2010, Jadavpur University (jointly with Prof. A. Datta).
3. **Sumanta Banerjee**: “Control of natural Convection by Thermomagnetic Convection”, PhD 2012, Jadavpur University (jointly with Prof. A. Mukhopadhyay and Prof. S. Sen).
4. **Tapan K. Roy**: “Exergy-based Operation, Maintenance and Control Strategy in Thermal Power Plant Systems”, PhD 2012, Jadavpur University (jointly with Prof. A. Gupta).
5. **Soumya Bhattacharya**: “Biomimetic synthesis and characterization of water dispersible iron oxide – graphene nanocomposites for medical applications,” PhD, 2016, Jadavpur University (jointly with Dr. S. Nayar, NML, Jamshedpur), <http://hdl.handle.net/10603/221071>
6. **Pritam Kumar Das**: “Performance improvement of solar thermal collectors using nanofluids,” PhD 2019, Jadavpur University (jointly with Prof. A. K. Santra), <http://hdl.handle.net/10603/355219>.
7. **Abhisek Samanta**: “Magnetic bead based immunomagnetic separation for lab-on-a-chip devices”, PhD 2019, Jadavpur University (jointly with Prof. N. Modak, and Prof. A. Datta), <http://hdl.handle.net/10603/350955>.
8. **Ritwick Ghosh**: “Industrial fog water harvesting and in situ decontamination with photocatalytic nanomaterials”, PhD 2020, Jadavpur University (jointly with Prof. I.K. Puri, McMaster University), <http://hdl.handle.net/10603/356393>.
9. **Chayan Das**: “Investigation of the effects of surface wettability and flow parameters on vapor condensation in presence of non-condensable gases,” PhD, 2021, Jadavpur University (jointly with Prof. A. Datta), <https://shodhganga.inflibnet.ac.in/handle/10603/361794>.
10. **Amitava Dutta**: “Analysis of electrothermal transport in microfluidic environment,” PhD 2022, Jadavpur University (jointly with Prof. A. K. Santra).
11. **Debiprasad Chakraborty**: “Analysis of ferrofluid droplet-based digital microfluidic system,” Ongoing (jointly with Prof. N. Chakraborty).
12. **Arkadeep Datta**: “Design and performance analysis of solar thermal decontamination systems using wettability-engineered surfaces,” Ongoing.
13. **Subahshree Prusty**: “Magnetic particle-induced mixing in miniature volumes for μ -TAS applications,” Ongoing.

ME Research Supervised:

	Title of Thesis	Name of Student	Dept.	Year (Completed)	Supervisor(s)
1	Structure and dynamics of triple flames at different equivalence ratio	Atanu Kundu	ME (Power)	2006	Dr. A. Datta, Dr. R. Ganguly
2	Characterization of magnetic field for MEMS application	Arunava Santra	ME (Power)	2007	R. Ganguly , N. Chakraborty
3	Energy and exergy analysis of the turbine cycle of a steam power plant	Nirmalya Mazumdar	ME (Power)	2007	Dr. R. Ganguly , Prof. S. Dutta Gupta
4	Experimental investigation on performance characteristics of LPG cooktops	Dipanjan Basu	ME (Power)	2007	Dr. A. Datta, Dr. R. Ganguly ,

	Title of Thesis	Name of Student	Dept.	Year (Completed)	Supervisor(s)
5	Experimental investigation of heat transfer and emission characteristics from a rich premixed flame impinging on a flat wall	Chiranjib Saha	ME (Power)	2007	Dr. A. Datta, Dr. R. Ganguly,
6	Performance improvement of domestic cookstoves through burner modifications	Rajarshi Saha	ME (Power)	2007	Dr. A. Datta, Dr. R. Ganguly
7	Analysis of externally fired gas turbine cycle using biomass as fuel	Luna Sarkar	ME (Power)	2008	Dr. A. Datta, Dr. R. Ganguly
8	Characterizing magnetic field from planar spiral electromagnets for microfluidic applications	Susovan Dutta	ME (Power)	2009	Dr. R. Ganguly Dr. N. Chakraborty
9	Experimental characterizations of the magnetic and thermal properties of ferrofluid	Srijit Chakraborty	ME (Power)	2010	Dr. A. Datta, Dr. R. Ganguly
10	Characterization and control of a ferrofluidic-micropump	Madhushree Sarkar	ME (SNSA)	2012	Dr. R. Ganguly Dr. A. Mukhopadhyay
11	Transient characteristics of thermomagnetic flow in pipes and enclosure	Upasana Panigrahi	ME (Power)	2013	Dr. R. Ganguly, Dr. A. Datta
12	Characterization of static and dynamic contact angles of immersed ferrofluid droplets for microfluidic applications	Dipanwita Bhowmik	ME (Power)	2013	Dr. R. Ganguly Dr. A. Mukhopadhyay
13	Numerical Simulation of Thermomagnetic Convection in a Rectangular Loop	Dipanjan Ray	ME (SNSA)	2013	Dr. R. Ganguly Dr. A. Mukhopadhyay,
14	Performance studies of ferrofluid-based pulsating heat pipes	Manish Hazra	ME (SNSA)	2013	Dr. R. Ganguly Dr. A. Mukhopadhyay,
15	Numerical study of DWC over a flat plate in presence of noncondensable gases	Gourab Banerjee	ME (Power)	2016	Dr. R. Ganguly Dr. A. Datta
16	Effect of surface roughness on wettability and condensation behavior	Ankit Roy	ME (Power)	2018	Dr. R. Ganguly Dr. A. Datta
17	Use of Quantitative Schlieren Imaging in Condensation from Humid Air on Wettability-engineered Surfaces	Rohit Gupta	ME (Power)	2018	Dr. R. Ganguly Dr. A. Datta
18	Fabrication of a Solar Still test rig and collection efficiency study by changing surface wettability of collector plate	Arkadeep Datta	ME (Power)	2018	Dr. R. Ganguly Dr. A. Datta
19	Performance characterization of direct absorption solar collector using nanofluid	Altaf Hossain Molla	ME (Power)	2018	Dr. A.K. Santra Dr. R. Ganguly

	Title of Thesis	Name of Student	Dept.	Year (Completed)	Supervisor(s)
20	Fabrication and Characterization of Transparent, Self-cleaning Glass Covers for Photovoltaic Cell	Vikash Singh	ME (Power)	2019	Dr. R. Ganguly Dr. D. Ghoshal
21	Quantitative Schlieren Imaging for Transient Free Convection in Single-Phase and Phase-Change Heat Transfer	Indranil Roy	ME (Power)	2019	Dr. R. Ganguly Dr. A. Datta
22	Study of deposit patterns from evaporation of nanofluid droplet	Sultan Ali	ME (Power)	2020	Dr. A.K. Santra Dr. R. Ganguly
23	Studies on the effects of free-stream velocity and surface inclination on vapor condensation from humid air on surfaces of different wettability	Saikat Halder	ME (Power)	2021	Dr. R. Ganguly Dr. A. Datta
24	Liquid droplet morphology on the fiber of a fog harvester mesh	Partha Sarathi Dutta	ME (Power)	2021	Dr. R. Ganguly Dr. A. Datta
25	Dynamics of liquid droplet detachment from horizontal fibers	Arijit Saha	ME (Power)	2022	Dr. R. Ganguly Dr. A. Datta
26	Effect of free-stream flow on condensation from humid air on zinc-silicate epoxy-coated plate	Arijit Das	ME (Power)	2022	Dr. R. Ganguly Dr. A. Datta
27	Characterization of TiO ₂ -Water Nanofluid Droplet Evaporation	Saptarshi Mondal	ME (SNST)	2022	Dr. S. Sen Dr. A.K. Santra Dr. R. Ganguly
28	TBD	Rudrajit Majumder	ME (Power)	2022 (Exptd)	Dr. R. Ganguly Dr. A. Datta
29	TBD	Surjayan Biswas	ME (SNST)	2023 (Exptd)	Dr. S. Sen Dr. A.K. Santra Dr. R. Ganguly

*SNSA = School of Nuclear Studies & Applications; SMSN = School of Material Science & Nanotechnology

TEACHING EXPERIENCE

Courses Taught at Jadavpur University

1. Heat transfer (undergraduate)
2. Fluid mechanics (undergraduate and postgraduate)
3. Engineering mechanics (undergraduate)

4. Thermodynamics (undergraduate and postgraduate)
5. Power cycles, systems and economics (undergraduate and postgraduate)
6. Computational fluid dynamics (undergraduate)
7. Combustion (undergraduate)
8. Energy resource and utilization systems (undergraduate)
9. Energy conversion methods (undergraduate)
10. Nonconventional power generation (undergraduate)

Teaching Experience at University of Illinois at Chicago.

1. Fluid mechanics (Graduate Teaching Assistant for Laboratory and Tutorial classes)
2. Mechanical engineering laboratory (including course restructuring and development under an interdisciplinary project titled “Assessing Writing in Engineering: Connecting Accreditation with Classroom Practice” (<http://litd.psych.uic.edu/initiatives/grant/feldman.html>)).

INDUSTRIAL CONSULTANCY

1. Advanced Technical Consultancy for the DPL DAS MIS Project for Electronics Research & Development Centre of India, 2001.
2. Advanced Technical Consultancy for CFD analysis of CW Pump Sump for Development Consultants Private Limited (DCPL), 2010, 2015.
3. Energy Audit at Emami Paper Mills Limited, Gulmohar Unit, Emami Group, 2016.

INVITED INDUSTRIAL/ ACADEMIC TALKS/ SEMINARS DELIVERED

1. *Capillary-driven fluid transport on paper-based microfluidic devices – the future of low-cost healthcare*, Jagadis Bose National Science Talent Search, June 2018.
2. Versatile use of magnetic particles in microfluidics, QIP Short-term Course, IIT Chennai, November 2017.
3. *Action at a distance: Magnetic particles for lab-on-a-chip devices*, Defense Research and Development Establishment - Gwalior, September, 2014.
4. *Pumpless transport of liquids: from atmospheric water harvesting to personalized healthcare*, Global Change Program Seminar Series, Jadavpur University, September 2014.
5. *Wettability engineering for surface microfluidics applications*, National Institute of Agartala, August 2014.

6. *Maneuvering magnetic particles in microfluidic devices for biomedical applications*, Northern Illinois University, April 2014.
7. *Harnessing Magnetic Nanoparticles for Biomedical Applications*, National Metallurgical Lab, Jamshedpur, March 2013.
8. *Magnetic Particles-based Microfluidics for MEMS and BioMEMS Applications*, CSIR-CMERI, Durgapur, March 2011.
9. *Thermal aspect of Power Plant Engineering*, Adani Power Limited, Ahmedabad, August and March 2012.
10. *Magnetic Particles-based Microfluidics for MEMS and BioMEMS Applications*, CEIR-CMERI, Durgapur, March 2011.
11. *Combustion Application in Power Plants*, Power Management Institute, NTPC, NOIDA, December 2010, September 2011, June 2012, September 2014.
12. *An Introduction to Computational Fluid Dynamics*, Staff Training Program at the Development Consultants Private Limited (DCPL), March 2010.
13. *Environmental Pollution from Thermal Power Plants*, Staff Training Program at the Power Station Personnel Training Institute of Bandel Thermal Power Station of West Bengal State Electricity Board, India, June 2000 and June 2001.
14. *Power Plant Controls*, HRD program, Calcutta Electricity Supply Company, India, September 2000 and July 2001.
15. *Power Plant Performance Monitoring and Optimization*, DESCON, Calcutta, India, March 2000.

REPRESENTATIVE INSTITUTIONAL ASSIGNMENTS

1. Student President, Graduate Student Advisory Committee, UIC Department of Mechanical and Industrial Engineering, 2003–04; Departmental student representative at the UIC Graduate Students Council.
2. Member of the Board of Studies, Power Engineering Department, Jadavpur University, 1998–2001, 2005—till date.
3. Member of the Faculty Council of Engineering and Technology, Jadavpur University, 2006 – 2010.
4. Head, Department of Power Engineering, April 2010 – April 2012.
5. Member of the Core Committee for Research and Development, TEQIP-II, Jadavpur University, 2014 – 2016.
6. Coordinator, Departmental Research Scheme of UGC-SAP, Power Engineering Department, 2012-2017.
7. Advisory Committee member to the Students' Placement Cell, Jadavpur University, 2017 – till date.
8. Member, Center for development of Appropriate Social Technology (CAST), Idea Incubation Center, Jadavpur University, 2019 – till date.
9. Treasurer, Humboldt Club of Calcutta, March 2022 – till date.

OTHER ACADEMIC OUTREACH ASSIGNMENTS

1. Served as the External Examiner/ Panel member in Doctoral Theses in IIT Kharagpur (3 Theses), IIT Delhi (1 Thesis), Manipal Academy of Higher Education (1 Thesis), Thapar University (1 Thesis), University of Illinois at Chicago (7 Theses), McMaster University, Canada (1 Thesis).
2. Served as the expert member for PG Curriculum restructuring at the NIT Durgapur (2021).
3. Served as external expert in the Interviewer Panel at Durgapur Projects Limited, West Bengal Power Development Corporations Limited.
4. Served as external expert for inspection of Engineering Colleges under MAKAUT (the then WBUT).
5. Served in the panel of judges for student project evaluation at the Jagadis Bose National Science Talent Search (JBNSTS).
6. Participated in the International Engineering Sourcing Show 2018 in Chennai, and represented Jadavpur University with working model of “Cooling tower fog harvester.”
7. Participated at the Bengal Global Trade Expo 2022, April 20 – 24, 2022, Science City, Kolkata, and represented Jadavpur University with working model of “Wettability-engineered metal mesh for cooling tower fog harvesting.”

REVIEWER FOR THE JOURNALS:

1. ACS Nano
2. Advanced Materials and Interfaces
3. Applied Physics Letters
4. Applied Thermal Engineering
5. Biochemical Engineering Journal
6. Cell Proliferation
7. Chemical Engineering Journal
8. Computer Methods and Programs in Biomedicine
9. Energy
10. Experimental Thermal and Fluid Science
11. IEEE Journal of Microelectromechanical Systems
12. IEEE Transactions on CAD of Integrated Circuits and Systems

13. Industrial & Engineering Chemistry Research
14. International Journal of Multiphase Flow
15. International Journal of Thermal Sciences
16. Journal of Biomedical Nanotechnology
17. Journal of Engineering for Gas Turbine and Power, Transactions of ASME
18. Journal of Fluids Engineering, Transactions of ASME
19. Journal of Heat Transfer, Transactions of ASME
20. Journal of Magnetism and Magnetic Materials
21. Journal of Nanofluids
22. Journal of the Institute of Engineers
23. Journal of Thermal Science and Engineering Applications
24. Langmuir
25. Materials Science and Engineering
26. Meccanica
27. Medical Engineering and Physics
28. Microfluidics and Nanofluidics
29. Physics Letters A
30. Physics of Fluids
31. Recent Patents on Nanomedicine
32. RSC Advances
33. Scientific Reports
34. Sensors and Actuators A: Physical
35. Thermochimica Acta
36. Zeitschrift fuer Naturforschung A

REVIEWER OF PROPOSALS FOR FUNDING AGENCIES:

1. Department of Atomic Energy (DAE) – BRNS, Govt. of India
2. Department of Science and Technology – SERB, Govt. of India
3. IMPRINT, MHRD, Govt. of India
4. ANID impulsa el conocimiento, el desarrollo tecnológico y la innovación, Chile.

PERSONAL

1. Born, January 2, 1974
2. Indian Citizen
3. Married, father of one child

REFERENCES

1. Prof. Ishwar K. Puri, Department of Aerospace and Mechanical Engineering, and Vice President, Research, University of Southern California, email: uscprovost@usc.edu.
2. Prof. C. M. Megaridis, Mechanical and Industrial Engineering Department, University of Illinois at Chicago, email: cmm@uic.edu.
3. Prof. Dr. Steffen Hardt, Nano- und Mikrofluidik, Technische Universität Darmstadt, email: hardt@nmf.tu-darmstadt.de.
4. Prof. Amitava Datta, Department of Power Engineering, Jadavpur University, email: amdatta_ju@yahoo.com.